

REMARKS

Claims 1 - 21 remain pending in the present application, of which claims 17 - 21 have been withdrawn from consideration and claim 1 has been amended to place the application in better condition for examination. Early examination and allowance of the application is respectfully requested in view of the following remarks.

Tsang discloses a periodic lower quantum well structure which is formed by etching utilizing the substrate as an etch stopper, an intermediate layer which should embed the etched profile and produce a planarized surface, and an upper quantum well structure formed on the planarized upper surface of the intermediate layer.

Applicant's claimed DFB laser comprises a lower quantum well structure, an intermediate layer formed on the lower quantum well structure, an upper periodic quantum well structure formed on the intermediate layer and patterned by etching utilizing the intermediate layer as an etch stopper, and a guide layer formed to cover the periodic upper quantum well structure.

The claimed structure is different from the Tsang device. Tsang does not teach to switch the upper and the lower quantum well structures. The Applicant's invention is easier to fabricate. It would be difficult to stop etching precisely at an interface between the etched layer and an underlying layer serving as an etch stopper. Moreover, if the Examiner takes the position that it would have been obvious to switch the upper and the lower quantum well structures, then it is respectfully requested that the Examiner provide an explanation as to why such would be obvious.

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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Version with markings to show changes made

IN THE CLAIMS:

Claim 1 has been **AMENDED** to read as follows:

1. (Twice Amended) A distributed feedback semiconductor laser, comprising:

a lower quantum well structure extending along a resonator direction, said lower quantum well structure having a lamination of alternately stacked lower barrier layer and lower well layer having a band gap narrower than the lower barrier layer;

an intermediate layer disposed on said lower quantum well structure, said intermediate layer having a band gap broader than the lower well layer and a thickness thicker than the lower barrier layer; [and]

an upper quantum well structure periodically disposed on said intermediate layer along the resonator direction, said upper quantum well structure having a lamination of alternately stacked upper well layer and upper barrier layer having a band gap broader than the upper well layer [,] ; and

a guide layer covering said upper quantum well structure, contacting side walls of said upper quantum well structure and an upper surface of said intermediate layer, the guide layer having a band gap broader than the upper well layer,

wherein envelope of the upper quantum well structure is formed by etched profile which extends to and exposes said intermediate layer.

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